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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,293	07/20/2001	Ali Kheymehdooz	Q01-1021-US1	1710

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EXAMINER

SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 12/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/910,293

Applicant(s)

KHEYMEHDOOZ

Examiner

Andrew L. Snizek

Art Unit

2651

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,16-29,33-36 and 42 is/are rejected.
- 7) ☒ Claim(s) 2,12-15,30-32 and 37-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Information Disclosure Statement

The information disclosure statement filed 8/20/01 has been considered.

Drawings

The drawings filed 10/9/01 are acceptable by the examiner.

Claim Objections

Claims 37 and 38 are objected to as not particularly pointing out and distinctly claiming the invention since these claims refer to "the operational amplifiers" and "the multiplexed voltages" which were not previously set forth. It appears that claim 37 should depend on claim 36 and claim 38 should depend on claim 37.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless-

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Patton et al.

Patton et al. teaches a disk drive that includes an actuator with a VCM, a driver circuit and a sense resistor (figure 3 along with column 7, lines 27-60) that satisfies the limitations of claim 33. The microprocessor although not shown is discussed in column 7, lines 34-36

satisfying the limitations of claims 34-35. The operational amplifiers, claim 36 are satisfied by amplifiers 27 and 29.

Claims 1, 16-29, 33-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawachi (6,643,088).

Kawachi teaches a head unload arrangement and corresponding method of operation that includes measuring the voltage across the VCM and a sense resistor that is in series with the VCM in order to calculate a back emf voltage (figure 5) for adjusting the velocity of the transducer (figure 7). Figure 1 teaches the use of a target velocity to form a velocity error that is then used by controller (101) to control the velocity of the transducer as set forth in claims 16, 17 and 20. Column 10, lines 20-21 teaches that controller (101) uses a proportional integration technique as set forth in claim 18. Figures 6 and 7 teach the discrete time limitation as set forth in claim 19. The claimed step of calculating a controlled variable as set forth in claim 21 is satisfied by the operation of the speed controller (41) depicted in figure 5. The velocity error in Kawachi is calculated in discrete-time as set forth in claim 22 and is provided as an input to controller (41). As seen in figure 5 the current velocity (previous sampling period) is feedback to produce a new velocity error (current sampling period), claim 23. This continues until a change in speed is not needed satisfying the limitation of claim 24. Stopping the VCM and the transducer control as set forth in claims 25 and 26 is inherent in the arrangement as taught by Kawachi since once the transducer is completely unloaded no further movement is necessary. Claims 27-29 set forth similar limitations as discussed above and therefore rejected for similar reasons. Claim 33 although written with structural limitations substantially sets forth the same limitations as those in claim 1 which as discussed above is satisfied by Kawachi. The claimed

internal resistance is satisfied by the coil resistance (column 8, line 10). The driver circuit is satisfied by element (41). As discussed for example column 2, lines 45-46 along with figure 5 of Kawachi a microprocessor can be used in the calculation of back emf voltages that is used to adjust the speed of the transducer satisfying the limitations of claims 34 and 35.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-11 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawachi in view of applicants admitted prior art as discussed in the background of the invention. Kawachi teaches a head unload arrangement as discussed above with respect to claim 1 with is incorporated herein. Claims 3-5 and 42 further set forth that the back emf voltage is calculated using a PWM technique or an IR cancellation technique. Although neither is specifically discussed in Kawachi, both are notoriously well known as discussed in the background of the invention as alternative ways to determine a back emf voltage. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate either type of voltage determination technique into the arrangement of as taught by Kawachi, knowing that each technique has its specific advantages and disadvantages as discussed in page 3, line 18 – page 4, line 12 of the present specification. As discussed for example column 2, line 45-46 of Kawachi a microprocessor can be used in the calculation of back emf voltages that is used to adjust the speed of the transducer, satisfying the limitations of claims 6 and 10. The limitations of claims

7-9 would be satisfied by the combination of Kawachi and applicants admitted prior art for reasons discussed above. As seen from figure 1 of Kawachi, the adjustment of the speed of the transducer in controller in real-time by the use of an element such as (101) satisfying the limitations of claim 11.

Allowable Subject Matter

Claims 2, 12-15 and 30-32, 37-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The claimed method as set forth in claim 2/1 wherein the VCM and sense resistor voltage measurements are calibrated at power-up is neither taught by nor an obvious variation of the art of record. The claimed step of measuring a reference voltage through separate paths as set forth in claim 12/1 and 30/27 are neither taught by nor an obvious variation of the art of record. Claims 37-41 are believe to depend directly/indirectly on claim 36 in order for the claims to be understood. The claimed multiplexer as set forth in claim 37 and 38 used in conjunction with the operational amplifiers is neither taught by nor an obvious variation of the art of record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawachi et al., Pedrazzini, Carobolante, Klaasen et al. and Funches are cited as disclosing similar arrangements to the claimed invention.

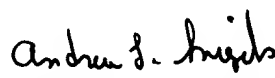
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Snizek whose telephone number is 703-308-1602. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-308-4825. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.


Andrew L. Snizek
Primary Examiner
Art Unit 2651

A.L.S.
December 12, 2003